NASA Range Safety Program 2007 Annual Report

The Space Florida Customer Assistance Service Program for the Eastern Range

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To attract and win new commercial business, improve timeliness, and optimize the cost of doing business, Space Florida initiated the Customer Assistance Service Program for the Eastern Range and identified two experienced, highly regarded contractors to implement their program. The Customer Assistance Program has three phases:

- Phase I Analysis and Design: "Initial" Universal Document System and Range Safety Mentoring Capability/Services for customers; training plan development and course planning; and conceptual studies for a universal flight safety system. This Phase was completed in 2007
- Phase II Develop, Test, and Deliver: "Mature" Universal Document System and Range Safety Mentoring Capability/Services for customers; training course development; and feasibility study for selected universal flight safety system concepts. This phase is currently in progress.
- Phase III Maintain and sustain customer services with continuous process improvement; complete testing, and obtain 45th Space Wing, Range Safety approval of the selected universal flight safety system.

Mentoring

Mentoring includes instruction and training and professional consultant services. Current customers include SpaceX and Orbital Sciences, with several more candidates coming on board in the near future. Services have included:

- Assistance with Universal Document System documentation
- Flight safety system review and advice
- AFSPCMAN 91-710, Range Safety User Requirements
- Tailoring assistance
- Compilation of new customer lessons learned
- Liaison with the 45th Space Wing

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Training

In Phase II, the final training plan is complete and the following courses, originally developed by NASA Range Safety, will be tailored for commercial customers:

- Range Safety Overview
- Range Flight Safety Analysis
- Range Flight Safety Systems

In addition, one new course, *AFSPCMAN 91-710 Requirements*, is under development. This course contains 10 stand-alone modules that cover the full spectrum of AFSPCMAN 91-710 requirements. Module 1 is an overview of the entire document, and modules 2 through 10 are in-depth reviews of the nine major sections of 91-710. All modules are designed for both engineering and non-engineering staff of commercial customers.

Universal Flight Safety System

The third component of Customer Assistance Service Program for the Eastern Range is the development of the universal flight safety system. This development will pay big dividends for the State of Florida by providing an incentive for commercial customers to come to the Eastern Range. The plan is to develop the universal flight safety system, either at the component level or system level, obtain pre-approval of the components and/or system by 45th Space Wing, Range Safety, and make it available to commercial customers, saving them much of the cost and time for flight safety system development and testing.

The Space Florida contractor will collect and document available universal flight safety system component information to fully populate the "Flight Termination System Component Matrix" developed in Phase I. The information will be divided and color-coded into categories and will contain enough information for customers to select current and future flight termination system components for a variety of launch vehicles.

The contractor will develop a Universal Flight Safety System Concept Feasibility Report recommending one short-term concept and one long-term concept for implementation. They will then prepare a Universal Flight Safety System Concept Implementation Plan for Phase III. This plan will include a detailed concept of operations and schedule. Current NASA systems under development, such as the enhanced flight safety system and the autonomous flight safety system, are included in the trade studies.

In Phase III, the contractor will update the universal flight safety system schedule and concept of operations; provide the required technical expertise during each phase of the flight safety system selection process to include support to identify flight safety system selection

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components, review proposed test plans, and monitor and review qualification and acceptance testing for each flight safety system selection component. The contractor will continue to work with Space Florida and its designated customers to receive final certification and approval from the Eastern Range to use each flight safety system selection component and/or integrated system.

The comprehensive training, professional consultations, and universal flight safety system options will greatly ease a new customer's transition onto the Eastern Range and significantly reduce the current time schedules for launch requirements.